Serial Number: 09/702,068

Filing Date: October 30, 2000

Title: Enzymatic Treatment of Whey Proteins for the Production of Antihypertensive Peptides and the Resulting Products

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6. (Twice Amended) A treatment regimen for a mammal to inhibit angiotensin-converting enzyme (ACE), said regimen comprising:

orally administering to the mammal, a product prepared according to claim 1, 12, or 13 in amounts and at intervals effective to [suppress] inhibit ACE[-] activity.

- 8. (Once Amended) A process according to claim 1, wherein <u>said whey protein fraction is a whey protein isolate</u>[said reaction is stopped when a degree of hydrolysis for the hydrolysate is reached within the range of from 5.5 to 20.5%].
- 10. (Once Amended) A process according to claim 1, wherein said [whey comprises a] whey protein [isolate] <u>fraction is produced</u> by ion exchange and characterized by a protein content of at least 94% and an ash content of less than 3%.
- 11. (Once Amended) A process according to claim 10, wherein said reaction is stopped when the degree of hydrolysis is within the range of from 5.5 to 6.5%[20.5%].
- 12. (Once Amended) A process for preparing an angiotensin-converting enzyme (ACE)-inhibiting composition comprising:

preparing an aqueous solution of <u>a</u> whey protein <u>fraction</u> [isolate] produced by ion exchange and a proteolytic enzyme, [comprising] wherein the proteolytic enzyme is trypsin;

holding said solution under conditions effective for reaction to partially hydrolyze said whey protein <u>fraction</u> [isolate] to provide a hydrolysate having increased [ACE-suppressing] <u>ACE-inhibiting</u> activity;

stopping the reaction when a degree of hydrolysis is reached within the range of from 5.5 to 6.5%, [20.5% and] wherein said hydrolysate is characterized by the following Molecular Weight Profile (HPLC)

Range (Daltons)	Soluble Peptides	
> 5000	50 - 55%	
2000 - 5000	15 - 20%	

AMENDMENT & RESPONSE UNDER 37 C.F.R. § 1.116

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< 2000

30 - 35%; and

drying said hydrolysate.

13. (Once Amended) A process for preparing an angiotensin-converting enzyme (ACE)inhibiting composition comprising:

preparing an aqueous solution of a whey protein fraction [isolate], prepared by ion exchange processing and characterized by a protein content of at least 94% and an ash content of less than 3%, and a proteolytic enzyme, wherein the proteolytic enzyme is trypsin; and

holding said solution under conditions effective for reaction to partially hydrolyze said whey protein fraction [isolate] to provide a hydrolysate having increased [ACE-suppressing] ACEinhibiting activity[;

stopping the reaction when a degree of hydrolysis is reached within the range of from 5.5 to 20.5%].

14. (Once Amended) A process according to claim 13, wherein said hydrolysate is characterized by the following Molecular Weight Profile (HPLC)

Range (Daltons)	Soluble Peptides
> 5000	50 - 55%
2000 - 5000	15 - 20%
< 2000	30 - 35%.

Please add the following new claims:

- 16. (New) A process according to claim 1 or 12, wherein the whey protein fraction has an ash content of <3%.
- 17. (New) A process according to claim 1, 12, or 13, wherein the whey protein fraction has a mineral content of calcium of 15-20 meg/kg.

- 18. (New) A process according to claim 1, 12, or 13, wherein the whey protein fraction has a mineral content of magnesium of <1 meq/kg.
- 19. (New) A process according to claim 1 or 12, wherein the whey protein fraction has a protein content of at least 35%.
- 20. (New) A process according to claim 1 or 12, wherein the whey protein fraction has a protein content that varies by 0 to 25% from $97.5 \pm 1.0\%$.
- 21. (New) A process according to claim 1 or 12, wherein the whey protein fraction has a protein content that varies by 5 to 10% from $97.5 \pm 1.0\%$.
- 22. (New) A process according to claim 1, 12, or 13, wherein the whey protein fraction has a protein content that varies less than 5% from $97.5. \pm 1.0\%$.
- 23. (New) A process according to claim 1, 12, or 13, wherein the whey protein fraction has a protein content of $97.5. \pm 1.0\%$.

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24. (New) A process according to claim 1, 12, or 13, wherein the whey protein fraction is characterized as follows:

Analysis	Specification	Typical Range
Moisture (%)	5.0 max	4.7 ± 0.2
Protein, dry basis	95.0 min.	97.5 ± 1.0
(N x 6.38)(%)		
Fat (%)	1.0 max	0.6 ± 0.2
Ash (%)	3.0 max	1.7 ± 0.3
Lactose (%)	1.0 max	<0.5
pН	6.7 - 7.5	7.0 ± 0.2 .

- 25. (New) A process according to claim 12 or 13, wherein the whey protein fraction is a whey protein isolate.
- 26. (New) A process according to claim 1, 12, or 13, wherein the proteolytic enzyme is porcine trypsin.
- 27. (New) A process according to claim 1, 12, or 13, further comprising concentrating said hydrolysate.
- 28. (New) A process according to claim 1 or 12, wherein the hydrolysate is spray-dried.
- 29. (New) A process according to claim 1, wherein the whey protein fraction is prepared by ion-exchange processing.
- 30. (New) A process according to claim 1, wherein said reaction is stopped when the degree of hydrolysis is within the range of from 11.0-12.5%.